

Teaching Treatment of Mild, Acute Diarrhea and Secondary Dehydration to Homeless Parents

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Ms. Smith's proposal won first prize in the contest for the 1987 Secretary's Award for Innovations in Health Promotion and Disease Prevention. The contest is sponsored by the Department of Health and Human Services.

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Synopsis

Homeless people in America are at risk for numerous health hazards. Diarrhea and consequent dehydration commonly affect homeless infants and children. Dehydration, if not treated, can quickly

become a medical emergency. If, however, signs of diarrhea and dehydration are recognized and treated early, medical complications may be avoided. Fortunately, some homeless people now have access to shelter facilities that provide health education and services. Education is a fundamental tool in the prevention of disease. For homeless children sick with diarrhea, an educated parent may mean the difference between life and death.

Therefore, an educational program was developed to help homeless parents recognize and treat mild, acute diarrhea and secondary dehydration. Participants were urged to treat mild diarrhea at home with oral rehydration therapy, thus preventing expensive medical treatment and hospitalization. The project was based on a format used in workshops designed for battered women's shelters. The program's philosophy reflects the belief that people possess many answers to problems, but often lack the opportunity or encouragement to make use of their knowledge.

AS THE NUMBERS OF AMERICANS who are homeless have increased, shelters to house and aid them have been established. The need for health services in shelter facilities has been recognized as necessary; some shelters provide in-house medical services. Shelters also provide an opportunity for health promotion using low-cost health education. If any long-term advantage can be made of the hapless circumstances that bring people to shelters, it is that the people can gain information useful for future survival and progress. A teaching project was designed and implemented to furnish an inexpensive, readily understandable process for early recognition and treatment of diarrhea and secondary dehydration.

An important aspect of the project is its capacity to involve parents in actively promoting the health of their children. Parents' past experiences and successes are used as a basis for discussion. Participants benefit from the project's practicality and simplicity, resulting in healthier children and more self-reliant parents. Furthermore, early recognition of illness will reduce the transmission of

pathogens in the crowded shelter environment, where the spread of disease is rapid.

The Problems of Diarrhea and Dehydration

Diarrhea is a common problem of infancy and childhood (1). Although its origins are diverse, the illness is often easily treated. Untreated diarrheal disease, however, is the leading cause of infant mortality in many developing countries (2). In the United States, children of homeless families are also at risk for severe illness or death due to untreated bouts of diarrhea. Many homeless families are unaware of the life-threatening potential of untreated diarrhea; other family problems therefore take precedence.

Management of infantile and childhood diarrhea and secondary dehydration has been a subject commonly discussed in medical literature. The question of which solution to use is one frequently argued in the literature. Finberg briefly reviewed the history and debate surrounding electrolyte concentrations of oral rehydration solutions (3).

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He called for a commercially prepared oral rehydration solution more appropriately suited to the electrolyte needs of infants and small children. In 1982, Finberg and coauthors declared that the extensive use of oral rehydration therapy should mean fewer hospitalizations, reduced nutritional problems, and a decreased mortality rate (2). In addition, the therapy was stated to be safe, inexpensive, and effective.

Lerman and coauthors cited diarrhea as the leading cause of infant and early childhood mortality in developing countries (4). They agreed that oral rehydration therapy is an effective and inexpensive way to treat diarrhea and prevent deaths. Swedberg and Steiner acknowledged that mortality due to dehydration is low in the United States when compared with the rates in developing countries (5). Yet, dehydration accounts for the second highest number of nonsurgical hospital admissions in the United States. It was estimated that more than 90 percent of the children with diarrhea could be successfully treated at home with oral rehydration therapy. The electrolyte concentrations of many commercially prepared oral rehydration solutions are not ideally proportioned. Swedberg and Steiner conceded, however, that most infants and children with mild, acute dehydration will do well on any clear fluid diet (5).

Finberg inferred a relationship between diarrheal disease and malnutrition by acknowledging that "enteric disease kills and, indeed, sometimes occurs because of malnutrition" (3a). Poverty was listed as a primary cause of malnutrition and enteric disease. Winick agreed that infection is a likely complication of poor nutrition and is common among the homeless (6).

From this literature summary, parallels can be drawn between malnourished populations of developing countries and poor, homeless people in the United States; both groups can benefit from knowledge of diarrhea-dehydration therapy. The researchers agreed that oral rehydration treatment of mild, acute diarrheal episodes can be effectively

managed at home, resulting in decreased medical costs and healthier children.

The Project

A group of women and children living at the Salvation Army Shelter for the homeless in San Antonio, TX, was identified as needing information about the treatment of diarrhea and dehydration in infants and children. According to the Clinical Specialist and the clinic's Registered Nurse, dehydration secondary to diarrhea is a major health risk of children at the shelter. The nurses had noted that shelter residents often wait to seek medical intervention until the ill child is listless and dehydrated.

Before implementation of the project, behavioral objectives were established for the participants to

- Arrive at a single definition of diarrhea. Elements of the definition will be a sudden or noticeable increase in the number of stools, decreased stool consistency, greenish stools, foul odor, and mucoid and bloody stools (1).
- Identify collectively four signs of dehydration that include no urination for 6 hours or more, no tears when crying, increased respirations, dry or sticky mouth, decreased activity, dry or sunken eyes, and sunken fontanelle (7).
- Develop collectively a home treatment course based on information generated during the teaching project. Treatment must include the use of clear liquids, avoidance of milk products for 12-24 hours; bananas, rice cereal, applesauce, and toast (BRAT) diet after liquids are well tolerated; skin care; and handwashing.
- Determine collectively when to bring a child to the clinic for treatment of diarrhea-dehydration.
- Generate collectively a list of available, local medical resources.

The project was developed in accordance with five teaching strategies:

- People learn better in situations where they feel respected and their experience in life is viewed as a rich resource (8). The concept is applicable to persons interested in the class because they are likely to have children in their lives and valuable experiences to share.
- "Problem solving is a method of learning" (9a). Homeless people are transient, making readily useable knowledge the most practical. Solving problems provides an opportunity for direct appli-

cation of knowledge, which reinforces the memory.

- "... learning will be facilitated when individuals see the relationship between what is to be learned and their personal needs and problems" (10). People at shelters strive for life's basic necessities, which include health maintenance for themselves and their children.

- "In the process of learning, knowledge precedes comprehension" (8). Shelter residents may not have been previously introduced to the subject of diarrhea-dehydration, which is taught at the knowledge level of cognitive learning.

- "Effective learning requires active participation" (9). Shelter residents may find it difficult to grasp the relevance of the information because their current circumstances are formidable. Participation will help to focus thoughts and increase the likelihood that all strategies will be successful.

Methods

A comfortable and inviting atmosphere was established by providing refreshments and arranging chairs in a circle. Names were exchanged, and there was a short discussion of the participants' and instructor's expectations. Group members were told they would be asked to participate. Because children are usually present, a simple snack such as cheese and crackers will keep everyone happy during the 40-minute interaction.

Participants were asked if their children had experienced bouts of diarrhea, vomiting, or both. A definition of diarrhea was requested by inquiring "How do you know when your child has diarrhea?" The definition should include all characteristics listed in objective 1; omissions should be corrected by the instructor. The definition was recorded on a flip chart page entitled "Diarrhea" that was subsequently taped to the wall as a reference. Next, common causes of diarrhea were read aloud by the instructor but not recorded. The list included ear infections, other infections (flu, parasites), unripe fruit, antibiotic therapy, toxic substances, and emotional upset (1).

Dehydration was introduced by asking "Why do we become concerned when a small child has diarrhea?" Dehydration was described by the instructor as being dried out. Several reasons for increased fluid loss during diarrheal episodes can be recited but not recorded: "loss of fluid and electrolytes in frequent watery stools, loss when there is frequent vomiting, fever and rapid breathing, continued renal loss" (1). The term "electro-

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lytes" should be defined at this time. The instructor assisted the group in generating a list of four signs of dehydration that was to be taped to the wall.

Participants were asked what they had done to treat diarrhea at home. All treatments were recorded, and the list was taped to the wall. Ineffective or dangerous treatments were crossed out, and unlisted but effective treatments were added. Treatments must include those in objective 3, and they should be explained. "Clear liquids" include apple juice, flat soda, Gatorade, and Jello water, to be given at half-strength and in small amounts to infants; popsicles can be given too. Exceptions are Pedialyte and other commercially prepared oral rehydration solutions that are given full-strength (examples were shown). The importance of skin care during diarrheal bouts was discussed; skin may be treated with a variety of commercial preparations in addition to thorough cleansing and leaving the buttocks exposed to air as often as possible. In addition, milk products, including milk-based formula, are to be avoided for the first 12-24 hours, when a diet of mashed bananas, rice cereal, applesauce, and dry toast or saltine crackers (the BRAT diet) may be instituted. If the BRAT diet is tolerated, regular foods and formula are begun on day 3 (11). A handout with details was given out to the participants. The instructor stated that good handwashing is essential to curtail the spread of diarrhea.

During a discussion, the group listed the following signs on a flip chart page entitled "Transport to clinic if": temperature higher than 103 degrees F for more than 2 days, unable to eat regular foods after 3 days of home treatment, severe stomach pain, bloody stools, increased frequency of diarrhea stools, and signs of dehydration. The list was taped to the wall and the group informed that these signs mean home treatment is not working, and it is time to seek professional help. The final group assignment was to generate a list of local medical facilities available for pediatric

Evaluation Problem

Flip chart—page 1

Mary is 18 months of age. She has had a noticeable increase in number of stools for 2 days. The stools are liquid enough to sink into her diaper and are greenish-brown. Mary is active, has no fever and urinates once every 3 hours.

1. Does Mary have diarrhea? (yes)
2. Does Mary need to be seen at the clinic? (no)

Flip chart—page 2

1. What kind of diet would be good for Mary? (clear liquid for 12-24 hours, then BRAT diet) (mashed bananas, rice cereal, applesauce, and dry toast or saltine crackers)

2. How much should Mary be given? (small amounts frequently)

3. What type of food should be avoided? (milk products)

4. What measure will help decrease the spread of diarrhea? (handwashing)

Flip chart—page 3

After 2 days on the clear liquid diet, Mary still has diarrhea, her activity has decreased, she has not urinated for 7 hours, and she is breathing rapidly.

1. Does Mary need to be seen at the clinic? (yes)

2. How did you arrive at this decision? (she hasn't responded to clear liquid diet and has decreased activity, decreased urination, rapid breathing)

Flip chart—page 4

1. What clinics are most easily available?

NOTE: Answers in parentheses are not to be written on the flip chart prior to workshop.

care that was also taped to the wall.

The five lists on the wall facilitated a problem-solving exercise of how to treat a girl with diarrhea (see box). Experience has shown that it is best to write the problem on the flip chart before the session and to read the problem orally to the group.

The instructor answered questions during the exercise, but was not part of the problem-solving process. Answers were written on a flip chart next to the appropriate questions. If responses were inaccurate, the confusion was discussed and misunderstandings corrected.

The project was concluded by reading aloud a summary prepared beforehand. Questions were requested and group members thanked for their

participation and congratulated for a job well done.

Discussion

The project was successfully implemented in two south Texas shelters for the homeless. Evaluations completed by participants indicated that the workshop was well received and considered beneficial. Although the evaluation tools provided useful information about immediate learning, the long-term usefulness of this project has not been determined. Research into this area is recommended.

The project can be easily held in other shelters and group settings. A minimal budget is required, and many supplies can be reused: flip chart, \$8; three color markers, \$4.50; examples of clear fluids, \$4; and masking tape, \$1. Refreshments are optional, but they are a good ice breaker (\$7). A wooden easel is also optional (\$20).

Ultimately, the project should remain simple and facilitate a successful outcome for all participants. It is the author's hope that every future group member and instructor will enjoy this learning project.

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